

p. 238 seems a slip for the "syenite-porphry" of p. 243. On p. 147, for "Skeat" read "Skeats." One or two prominent terms, like *roches moutonnées* and strain-slip cleavage, remain unnoticed in the truly admirable index. GRENVILLE A. J. COLE.

BIOLOGICAL CHEMISTRY.

An Introduction to Bacteriological and Enzyme Chemistry. By Dr. G. J. Fowler. Pp. viii+328. (London: Edward Arnold, n.d.) Price 7s. 6d. net.

IN this work we welcome a valuable contribution to the scanty English literature of a subject of vast and constantly growing importance. A great increase of interest in biological chemistry and a consequent rapid development of the subject along almost innumerable lines have been among the most noticeable features in the history of chemistry during the last ten or fifteen years. Stimulated by the brilliant successes of Fischer and the important researches of Buchner, many workers have devoted themselves to the study of biochemical problems, and especially to the investigation of enzyme action. Accompanying this scientific movement, and no doubt in part responsible for it, there has been a widespread introduction of biological methods into the routine experience alike of the industrial and analytical chemist. The subjects of agricultural and dairy chemistry, water analysis and sewage disposal, to say nothing of the advance in the old-established fermentation industries, at once suggest themselves as instances of this tendency, and an audience has thus been created anxious for authoritative information on the principles underlying the application of biology to all these questions.

It is to this audience that Dr. Fowler has addressed the main portion of his book. Anxious to meet the needs not only of the chemist, but of the engineer and medical officer of health, and even of the general reader, he has, however, included a chapter on general organic chemistry which it is to be feared will be found superfluous by the chemist, and will be "caviare to the general." Apart from this the plan of the book is excellent. The chief types of enzyme action and of the chemical action of bacteria are first discussed, along with the chemistry of the sugars and proteins, substances which play so important a part in all biochemical changes, and the book culminates in three chapters describing the relation of all these matters to agriculture, sewage disposal, and various industries. The treatment throughout is clear and practical, the excellent method being adopted of quoting as far as possible actual experimental results and methods from the original sources, and thus enabling the reader to appreciate the lines on which successful investigation of such problems must be shaped.

As might be expected in a book ranging somewhat lightly over a large field of detailed information, occasional inaccuracies are to be found. Thus the lactic and acetic fermentations (p. 13) have both been obtained by Buchner with cells killed by acetone; the discussion of the mutarotation of glucose might easily be understood to mean that the change is due to equilibrium occurring between the aldehyde and one of the oxide forms of glucose (p. 98). More serious

fault is to be found with the description of the well-known guaiacum test for peroxidases, along with the typical albumin reactions, as characteristic properties of enzymes in general (p. 104). Peroxidases are now recognised as a distinct and individual class of enzymes and it is at least highly probable that many enzymes are not proteins, and among them diastase itself, in connection with which these tests are quoted. Something, moreover, has gone seriously wrong both with the formulæ and argument on p. 173.

Some of the subjects touched upon are of fascinating interest, a notable example being found in the chapter on the "Cycle of Nitrogen." This is, of course, a matter of the most fundamental economic importance, and one with which the author is specially qualified to deal.

For all who feel any curiosity about biological chemistry this book should serve as an excellent introduction, and it should be difficult for anyone to read it without realising some of that glamour which has attracted so many workers to the investigation of the chemistry of living beings. A. HARDEN.

WEST GREENLAND ESKIMO.

Bei den Eskimos in Westgrönland. Ergebnisse einer Sommerreise im Jahre, 1906. By Dr. R. Trebitsch. Nebst einem ethnologischen Anhang, von Dr. M. Haberlandt. Pp. xxiii+162+map. (Berlin: Dietrich Reimer (Ernst Vohsen), 1910.) Price 8 marks.

DR. TREBITSCH gives a very readable and capitally illustrated account of his twelve weeks' journey in western Greenland. Considering how large was the distance covered in this short time, it is creditable to him how much information was collected. West Greenland, between 73° N. lat., and Cape Farewell, is in the possession of Denmark. The entire trade is in the hands of the Kgl. grönländischen Handel, a Government concern, somewhat similar to our old East India Company, and there are stringent regulations to prevent intrusion by other Powers. Travellers must have a valid pretext for going, must undergo medical inspection, and are not allowed to take intoxicants into the country.

It was only as a collector of phonographic records for the K. Akademie d. Wissenschaften of Vienna that Dr. Trebitsch could get leave at Copenhagen to visit West Greenland. The country is divided into districts, the chief town of each is a "colony," where lives a Government official, who is at the same time the sole trader; other officials, mainly natives, are scattered about at trading centres. The Danish régime is apparently beneficial; for the West Greenlanders have increased from 6,286 in 1820 to 11,790 in 1904, a striking contrast to the state of affairs among the Eskimo of Alaska. The writings of Dr. Boas and others have taught us to expect some degree of uniformity of culture among the Eskimo, despite their vast extension over some 5000 miles of coast line, but the similarity between the seal-hunting appliances of the Alaskan Eskimo and West Greenlanders is none the less striking; the same talent for drawing and the custom of vying with each other in composing songs are met with among both groups.

The author collected masks, though Andree and others have denied this occurrence in Greenland, which are probably used for magico-religious purposes, as in Alaska. He unduly emphasises the similarity of type occasionally found between Eskimo and American Indians, which he attributes to kinship of race. The low stature of the Eskimo he regards as an adaptation to the climate of the far north, as the strong storms do not permit tall plants to grow, and suggests that the lack of hair on the face of the pure Eskimo is consequent on the inconvenience caused by the formation of icicles! West Greenlanders are for the most part of mixed Eskimo and Danish origin; in fact, the largest "colony" boasts of only one pure-bred Eskimo.

The seal plays a very large part in the life of the Eskimo, and Dr. Trebitsch gives some interesting details of the methods employed in capturing it. The kayak is provided with a square white sail, almost concealing the hunter, which the seal is supposed to mistake for an iceberg. The seal is first shot with a rifle, and then harpooned, so that the harpoon float may prevent it from sinking. In winter two men use a harpoon with a composite shaft some 6 metres long. A very large and a small hole are bored in the ice; one hunter lies down peering into the former, and when he catches sight of a seal he moves the harpoon point to and fro in the small hole, which attracts the seal. At the right moment both men thrust the harpoon with all their might. This mode of hunting is called "he looks through a hole." In East Greenland bait is employed. The mainland Eskimo, however, always wait for a seal to come up to a breathing hole.

Native social customs are considerably in abeyance among the Christianised Eskimo, but the author was sometimes able to secure traces of the past; for instance, one missionary allowed the performance of one of the old native dances. The songs and stories, of which a large collection of phonographic records was taken, are in many cases modern, but some are manifestly old, and refer to cannibalism, exchange of wives, and the mating of girls with animals. Many of the songs have a homely vein. In some cases the distribution of the folk-tales is discussed. There is an ethnological appendix by Dr. M. Haberlandt, who describes the objects collected by Dr. Trebitsch for the Vienna Museum.

A. C. HADDON.

A VETERAN ANTHROPOLOGIST.

Memories of Eighty Years. By Dr. John Beddoe, F.R.S. Pp. xi+322. (Bristol: J. W. Arrowsmith; London: Simpkin, Marshall and Co., Ltd., 1910.) Price 7s. 6d. net.

DR. BEDDOE has followed the example of another distinguished anthropologist, the late Sir Francis Galton, in writing the memories of his life. This practice is to be commended, as it furnishes not only pleasant reading with a great deal of human interest, but also valuable material for the future historian of anthropology.

Dr. Beddoe, who may well be regarded as the founder of field anthropology, since he began making

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observations on hair and eye colours seventy years ago, records in this book the leading events of a long and active career. Born in 1826, on the English side of the Welsh border, he started life as a student of law, but soon abandoned that for the more congenial study of medicine. He acquired his medical knowledge at University College, London, and the University of Edinburgh.

In 1854 he went out to the Crimea as a member of a civil medical staff, where, though he had very little medical service to perform, he had the opportunity of making observations on many Oriental races. After his return from the Crimea, he decided to complete his medical studies at Vienna, and he gives an interesting account of his journey through Holland, Germany, and Bohemia, with many valuable and original observations on the ethnological features of the races he encountered on the way. He met van der Hoeven in Holland, and Virchow at Berlin. In Vienna he found the upper classes were of the Germanic type, and the lower orders very mixed, with a large Slavic element.

On leaving Vienna he returned to England through Italy and France, adding much to his knowledge of the races of those countries, which at that date were unexplored fields for the anthropologist. He finally settled down as a medical practitioner in Bristol.

The long list of anthropological papers published by Dr. Beddoe shows how persistently the rest of his life has been devoted to his favourite science.

In 1867 he was awarded a prize of 100 guineas by the Welsh National Eisteddfod for the best essay on the origin of the English nation, which was afterwards embodied in his classical book on the "Races of Britain."

He was the proposer of the first anthropometric committee of the British Association, and also the initiator of a separate section for anthropology at the B.A. In 1889 he was president of the Anthropological Institute, and he gives many interesting details about the amalgamation of the two older anthropological societies to form the institution which at present represents anthropology in this country.

Even now, in his eighty-fifth year, Dr. Beddoe's mental keenness and activity would put to shame that of most younger men.

PHYSICAL CHEMISTRY.

Introduction to Physical Chemistry. By Prof. J. Walker, F.R.S. Sixth edition. Pp. xii+417. (London: Macmillan and Co., Ltd., 1910.) Price 10s. net.

AFTER a useful life of eleven years, this well-known text-book appears in a thoroughly revised edition, in which, no doubt, it will continue to be a standard work. At first sight it appears as if the size of the work had remained sensibly constant—to use a favourite term of physical chemistry—actually there has been an increase of 27 per cent., and the additional chapters on alloys, hydrates, colloidal solutions, dimensions of atoms and molecules, neutrality and salt hydrolysis, electromotive force, polarisation and electrolysis, and radio-active transformations have